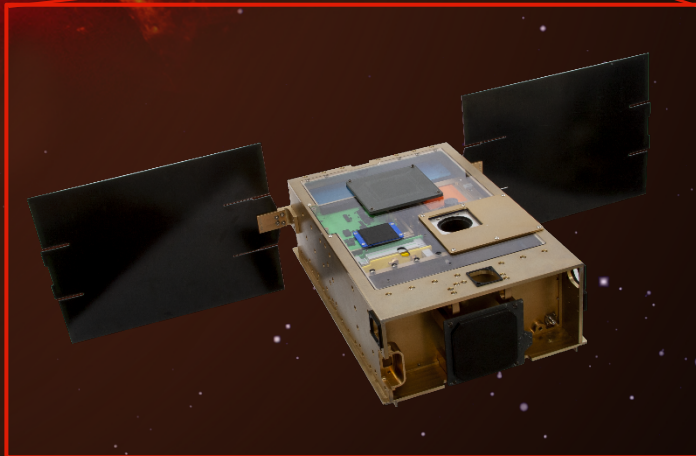




Jet Propulsion Laboratory
California Institute of Technology

Space Dynamics
LABORATORY
Utah State University Research Foundation

SSL
A MAXAR COMPANY



SunRISE Extended Phase A Update

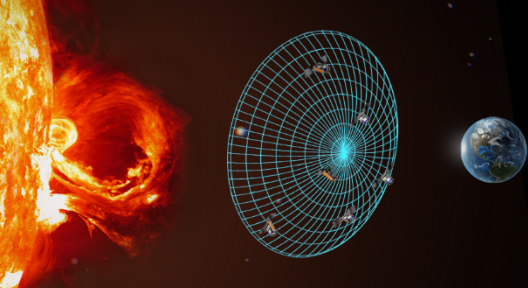
Alan M. Didion
Systems Engineer
NASA/Jet Propulsion Laboratory, California
Institute of Technology

CubeSat Developers Workshop
4/23-25/2019, Cal Poly San Luis Obispo

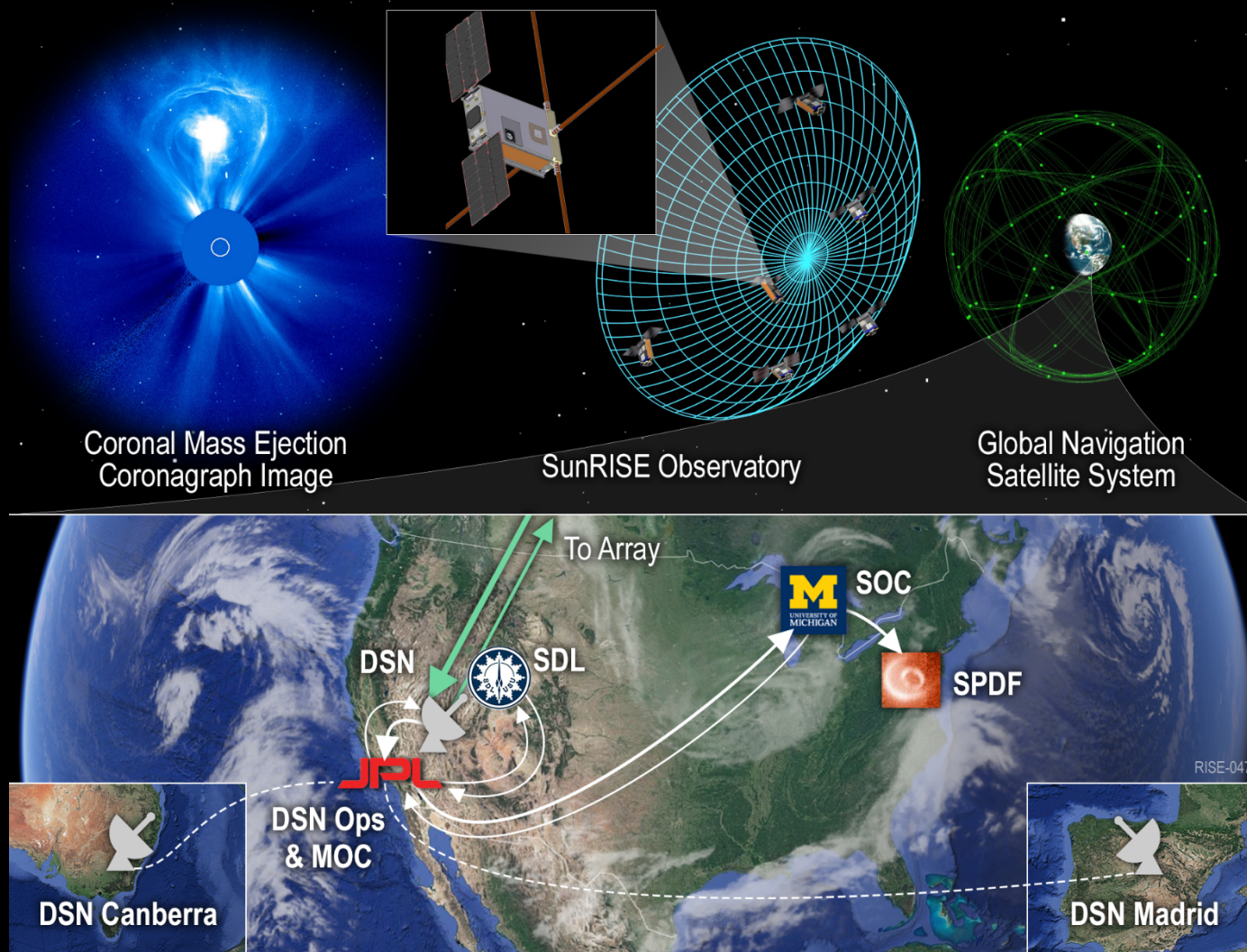


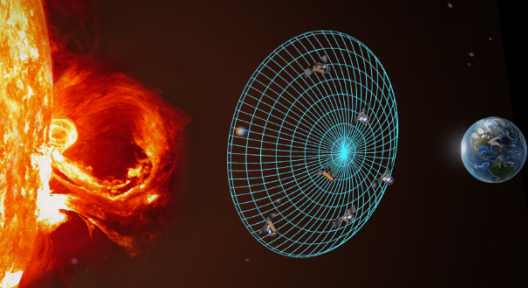
Sun Radio Interferometer
Space Experiment

PRINCIPAL INVESTIGATOR: Justin C. Kasper (University of Michigan)



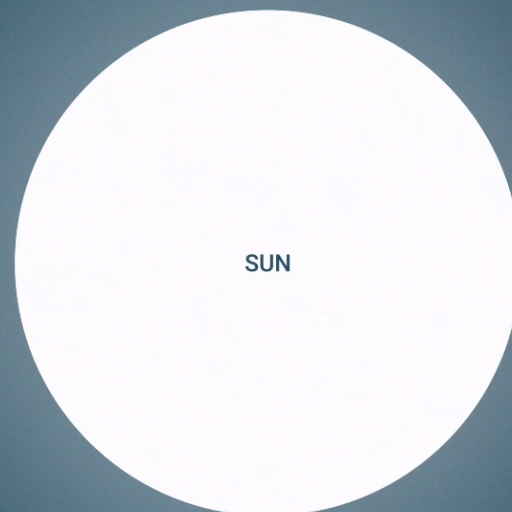
Concept Overview

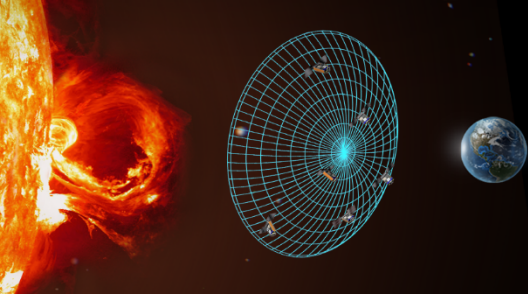




Concept Overview

SunRISE Science Objectives Require Localization





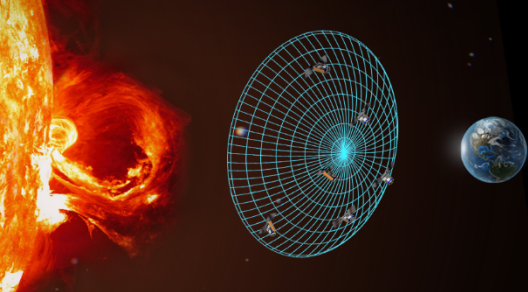
Current Status

- Step 2 CSR submitted July 2018
- Site Visit held at JPL, October 2018
- February 2019- Selected for Extended Phase A effort through ~September 2019

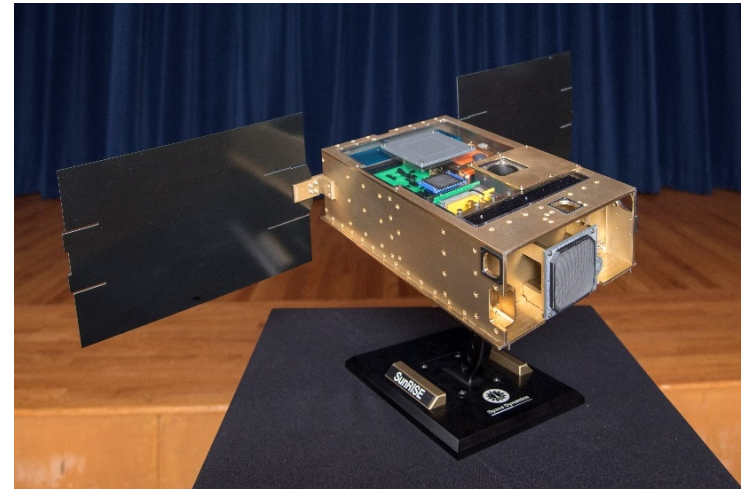


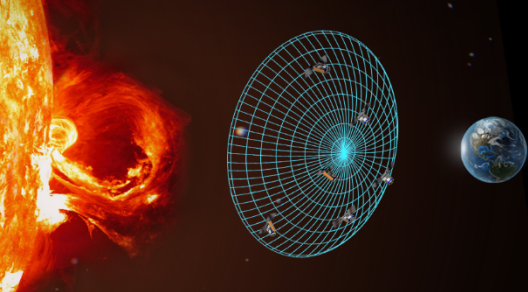
*Parker Solar Probe and Solar Orbiter both carry single radio antennas that will record the same emission as SunRISE from very different perspectives.

RISE_099d



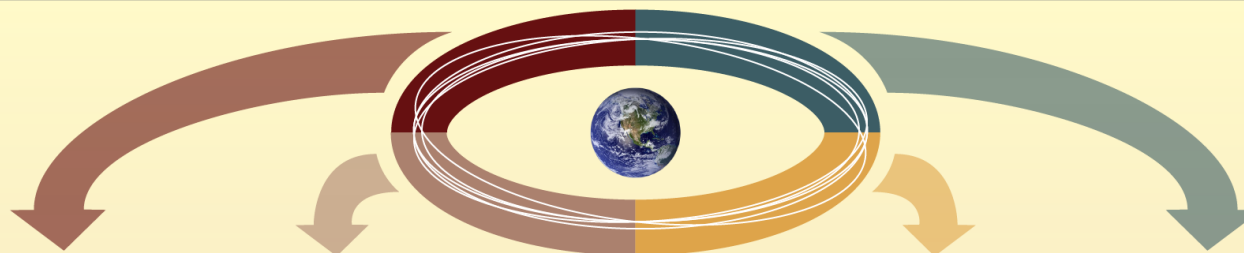
Site Visit



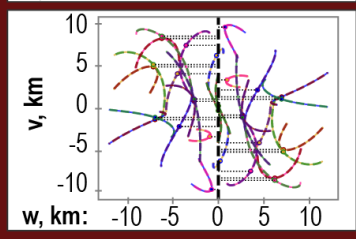
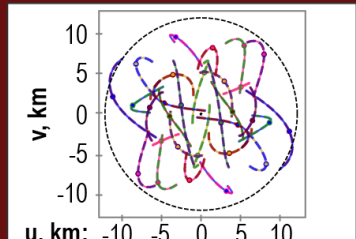
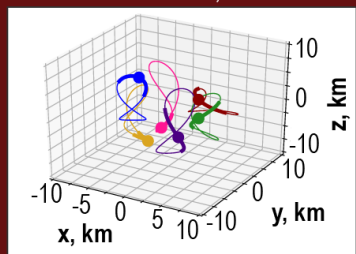


Mission Design- Prior to Site Visit

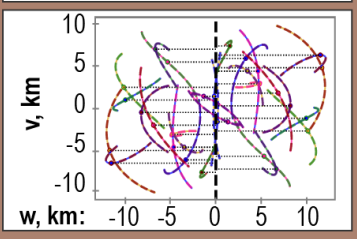
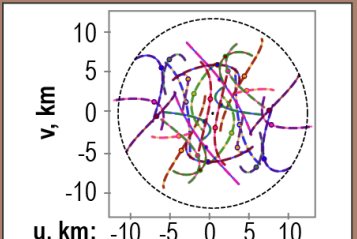
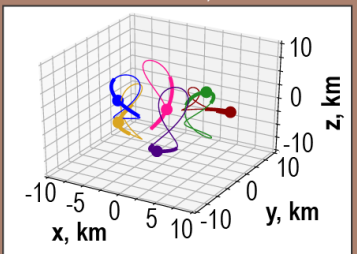
RISE_068b



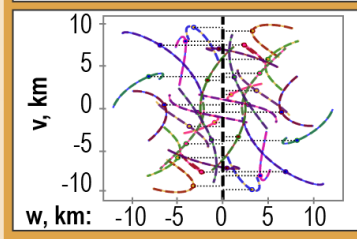
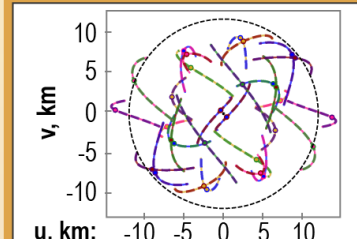
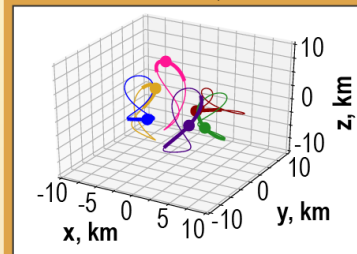
Orbit Phase 0°-90°, 0-6.25 hrs



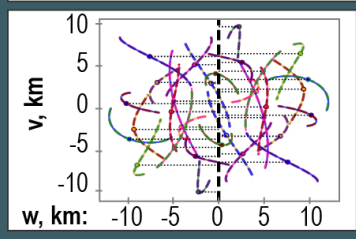
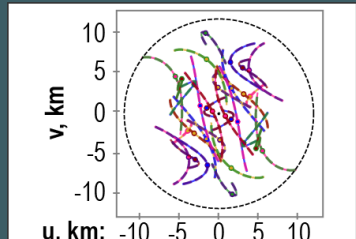
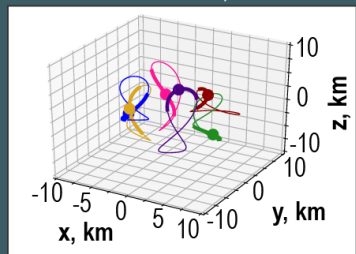
Orbit Phase 90°-180°, 6.25-12.5 hrs

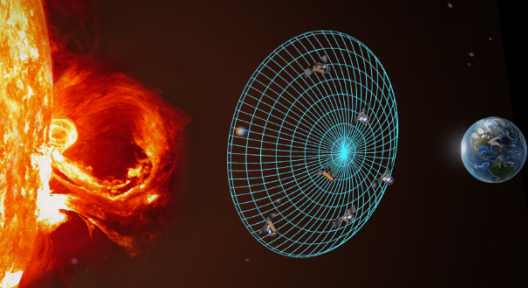


Orbit Phase 180°-270°, 12.5-18.75 hrs

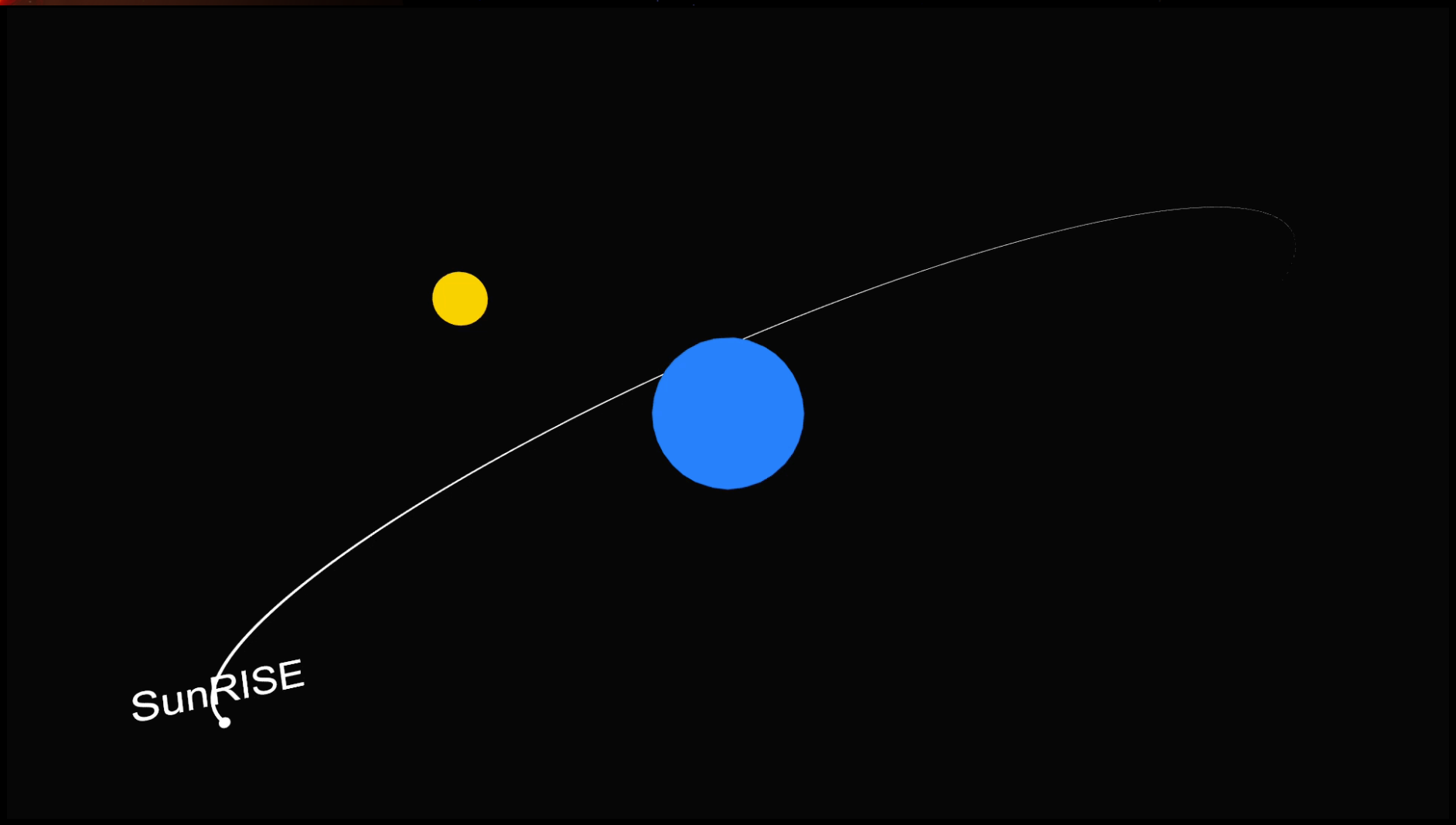


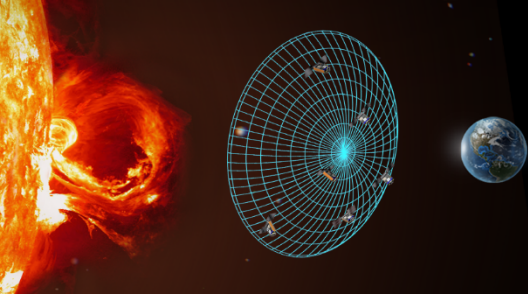
Orbit Phase 270°-360°, 18.75-25 hrs





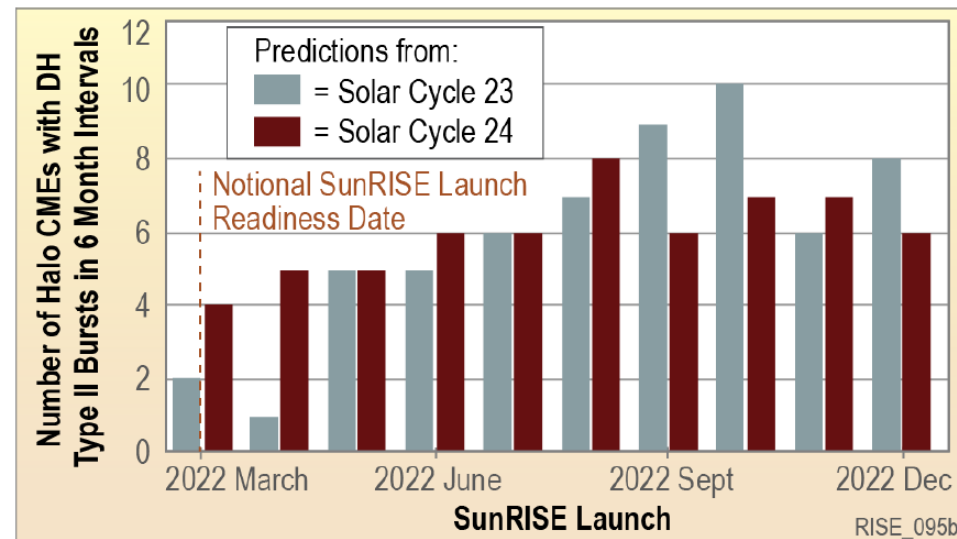
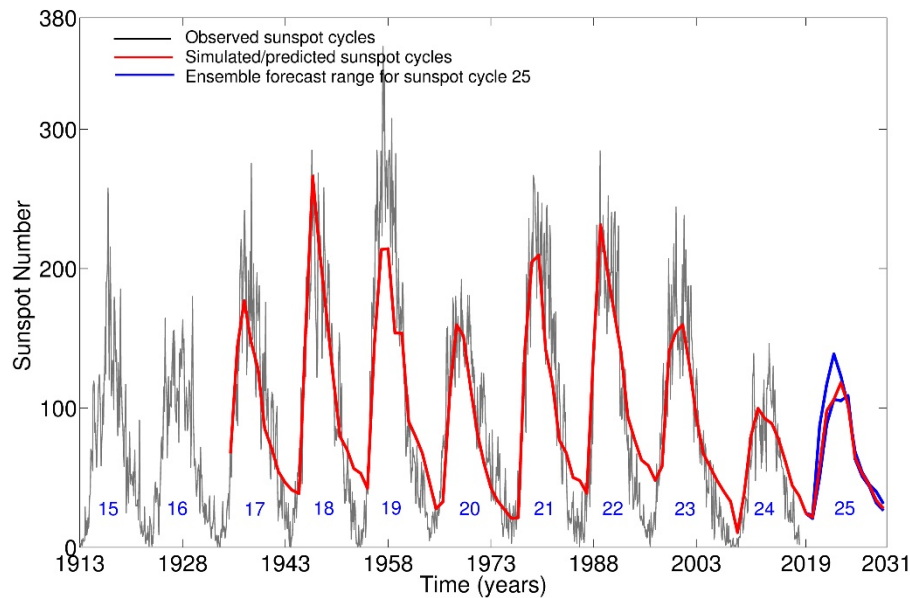
Mission Design- At Site Visit



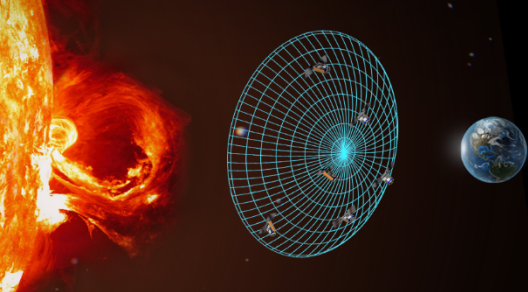


Outlook & Phase B

- Extended Phase A presents a “delay” to launch date
 - Only beneficial to the science case
 - Coupled with possible longer Phase E, further strengthens science sufficiency



P. Bhowmik, D. Nandy, “Prediction of the Strength and Timing of Sunspot Cycle 25 Reveal Decadal-Scale Space Environment Conditions”, Nature Communications 9, Article Number: 5209
<https://doi.org/10.1038/s41467-018-07690-0>



Thank You!

